

Listing of Claims

1. (Currently Amended) An antenna system for a base station comprising:
 - a support structure; and
 - a multiband/multichannel wireless feeder configured for coupling an antenna located proximate the top of a support structure with electronics located proximate the base of the support structure;
the multiband/multichannel wireless feeder including a flexible waveguide and a multiplexing waveguide network coupled at each end of the waveguide and coupled respectively with the antenna and the electronics, the multiplexing waveguide network configured to combine frequencies and applications associated with the antenna and electronics;
to overcome losses typically associated with coaxial cables.
2. (Cancelled)
3. (Currently Amended) The antenna system of claim 2 1, wherein the flexible waveguide is an elliptical waveguide.
4. (Currently Amended) The antenna system of claim 2 1, wherein the flexible waveguide is a circular waveguide.

5. (Currently Amended) The antenna system of claim 2 1, wherein a first application is in a 3G system and is combined by the waveguide network with a second application that is in a PCS system.

6. (Currently Amended) A multiband/multichannel wireless feeder configured for use in a base station to couple an antenna with electronics of the base station system, the multiband/multichannel wireless feeder comprising:

a flexible waveguide having a coupling at each end; and

a multiplexing waveguide network coupled at each end of the waveguide and configured to couple with a respective antenna or electronics of the base station, the multiplexing network configured to combine frequencies and applications associated with the antenna and electronics.

7. (Currently Amended) The multiband/multichannel wireless feeder of claim 6, wherein the flexible waveguide is an elliptical waveguide.

8. (Currently Amended) The multiband/multichannel wireless feeder of claim 6, wherein the flexible waveguide is a circular waveguide.

9. (Currently Amended) The multiband/multichannel feeder of claim 6, wherein the

first application is in a 3G system and is combined by the waveguide network with the second application that is in a PCS system.

10. (Currently Amended) A method of transmitting wireless signals at a base station between an antenna proximate the top of a support structure and electronics proximate the base of a support structure, the method comprising:

coupling antennas located proximate the top of a support structure and electronics located proximate the base of the support structure to respective multiplexing waveguide networks, the multiplexing waveguide networks respectively configured to combine frequencies and applications associated with the antenna and electronics;

coupling a flexible waveguide between the respective multiplexing waveguide networks to extend along the support structure and couple together the antenna and electronics to handle the frequencies and applications associated therewith.

11. (Cancelled)

12. (Currently Amended) The antenna system of claim 1 2 wherein said applications include at least one of a 2G, 2.5G, GRPS, IMT-2000, UMTS, CDMA, W-CDMA, FOMA, CDMA2000 system.

13. (Currently Amended) The antenna system of claim 1 2 wherein the multiplexing waveguide network includes a multi-frequency waveguide combiner.

14. (Previously Presented) The antenna system of claim 13 wherein the waveguide combiner utilizes a single polarization.

15. (Previously Presented) The antenna system of claim 13 wherein the waveguide combiner utilizes multiple polarizations.

16. (Currently Amended) The antenna system of claim 1 2 wherein the waveguide is flexible for being curved.

17. (Previously Presented) The multiband/multichannel wireless feeder of claim 6 wherein said applications include at least one of a 2G, 2.5G, GRPS, IMT-2000, UMTS, CDMA, W-CDMA, FOMA, CDMA2000 system.

18. (Previously Presented) The multiband/multichannel wireless feeder of claim 6 wherein the multiplexing waveguide network includes a multi-frequency waveguide combiner.

19. (Previously Presented) The multiband/multichannel wireless feeder of claim 6 wherein the waveguide combiner utilizes a single polarization.

20. (Previously Presented) The multiband/multichannel wireless feeder of claim 6 wherein the waveguide combiner utilizes multiple polarizations.

21. (Canceled)

22. (Previously Presented) The method of claim 10 wherein the multiplexing waveguide networks are configured to handle multiple different applications.

23. (Previously Presented) The method of claim 22 wherein said applications include at least one of a 2G, 2.5G, GRPS, IMT-2000, UMTS, CDMA, W-CDMA, FOMA, CDMA2000 system.

24. (Previously Presented) The method of claim 10 wherein the multiplexing waveguide networks include a multi-frequency waveguide combiner for handling different frequencies.

25. (Previously Presented) The method of claim 24 wherein the waveguide combiner utilizes a single polarization.

26. (Previously Presented) The method of claim 24 wherein the waveguide combiner utilizes multiple polarizations.

27. (Previously Presented) The method of claim 10, wherein the waveguide is an elliptical waveguide.

28. (Previously Presented) The method of claim 10, wherein the waveguide is a circular waveguide.

29. (Currently Amended) A wireless communication system base station comprising:

a support structure;
at least one antenna proximate a top of the support structure;
electronics located proximate a base of the support structure;
a multiband/multichannel wireless feeder configured for coupling the antenna with the electronics;

the multiband/multichannel wireless feeder including:
a flexible waveguide extending along the support structure; and
a multiplexing waveguide network coupled at each end of the waveguide and
coupled respectively with the antenna and the electronics, the multiplexing waveguide

networks configured to combine frequencies and applications associated with the antenna and electronics;

to overcome losses typically associated with coaxial cables.

30. (Cancelled)

31. (Currently Amended) The wireless communication system of claim 29 30,
wherein the flexible waveguide is an elliptical waveguide.

32. (Currently Amended) The wireless communication system of claim 29 30,
wherein the flexible waveguide is a circular waveguide.

33. (Currently Amended) The wireless communication system of claim 29 30,
wherein a first application is in a 3G system and is combined by the waveguide network
with a second application that is in a PCS system.

34. (Currently Amended) The wireless communication system of claim 29 30 wherein
said applications include at least one of a 2G, 2.5G, GRPS, IMT-2000, UMTS, CDMA,
W-CDMA, FOMA, CDMA2000 system.

35. (Currently Amended) The wireless communication system of claim 29 30wherein the multiplexing waveguide networks each include a multi-frequency waveguide combiner.

36. (Currently Amended) The wireless communication system of claim 29 30wherein the waveguide combiner utilizes a single polarization.

37. (Currently Amended) The wireless communication system of claim 29 30wherein the waveguide combiner utilizes multiple polarizations.

38. (Cancelled)